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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/795,787	03/08/2004	Yoshio Dejima	0828.70005	4078

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Patrick G. Burns, Esq.
GREER, BURNS & CRAIN, LTD.
Suite 2500
300 South Wacker Dr.
Chicago, IL 60606

EXAMINER	
DUONG, KHANH B	

ART UNIT	PAPER NUMBER
2822	

DATE MAILED: 05/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/795,787	DEJIMA, YOSHIO	
	Examiner	Art Unit	
	Khanh B. Duong	2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3/8/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election **without** traverse of Group I, claims 1-10, in the reply filed on January 19, 2006 is acknowledged. In addition, claims 11-14 were canceled by Applicant.

Currently, claims 1-10 remain pending.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on March 8, 2004 is being considered by the examiner.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: METHOD FOR FABRICATING A THIN FILM TRANSISTOR USING A HALF-TONE MASK.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The following limitations are not positively recited in the claims because of they comprise "to be formed". Thus, it is unclear regarding whether or not they are actually a part of the claims. Therefore, for the patentability purpose, these limitations will not be treated together with the rest of the limitations in the claims.

Re claim 2, the claim recites "a drain bus-line is to be formed" (line 3), "a thin film transistor is to be formed" (lines 4-5), and "a channel for the thin film transistor is to be formed" (line 6) (all emphasis added).

Re claim 3, the claim recites "a gate bus-line is to be formed" (line 3) and "a pixel electrode is to be formed" (lines 4-5) (all emphasis added).

Re claim 4, the claim recites "a drain-bus line is to be formed" (lines 6-7), "a thin film transistor is to be formed" (line 8) and "a channel for the thin film transistor is to be formed" (line 9) (all emphasis added).

Re claim 6, the claim recites "a gate bus-line is to be formed" (lines 8-9) and "a pixel electrode is to be formed" (line 12) (all emphasis added).

Re claim 7, the claim recites "a thin film transistor is to be formed" (line 5), "a pixel electrode is to be formed" (line 12) and "a gate bus-line is to be formed" (line 13).

Re claim 8, the claim recites "the thin film transistor to be formed" (two occurrences, lines 4 and 8).

Re claim 10, the claim recites "a thin film transistor to be formed" (line 5), "a contact hole to be made" (lines 8-9) and "a pixel electrode is to be formed" (line 10).

Other claims are rejected as depending on the rejected base claim(s).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 are rejected, as understood, under 35 U.S.C. 102(b) as being anticipated by Tanaka et al. (U.S. Patent No. 6,468,840).

Re claim 1, Tanaka et al. ("Tanaka") discloses in Figs. 15(a) to 15(e) a method for fabricating a stagger type thin film transistor substrate comprising the process of forming a resist pattern 108 with different thicknesses in different areas by performing exposure once on a resist with a half tone mask [see col. 11, lines 30-45].

Re claim 2, Tanaka expressly discloses in the same Figures a resist pattern 108 which masks a drain bus-line formed area 233 [Fig. 15(d)] on the thin film transistor substrate and a thin film transistor formed area [Fig. 15(b)] on the thin film transistor substrate and in which the thickness of the resist 108 in a channel formed area in the thin film transistor formed area differs from the thickness of the resist 108 in the drain bus-line formed area and the thin film transistor formed area other than the channel formed area is formed by performing exposure once on the resist 108 with the half tone mask.

Re claim 3, Tanaka expressly discloses in the same Figures a resist pattern 108 which masks a gate bus-line formed area 202 [Fig. 15(c)] on the thin film transistor substrate and a pixel electrode formed area 209 [Fig. 15(e)] on the thin film transistor substrate and in which the thickness of the resist 108 in the gate bus-line formed area 202 differs from the thickness of the

resist 108 in the pixel electrode formed area 209 is formed by performing exposure once on the resist 108 with the half tone mask.

Allowable Subject Matter

Claims 4-10 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following prior arts disclose relevant teachings regarding the use of half-tone masks to form semiconductor devices: Yoo (US '161), Watanabe (US '852), Igarashi (JP '541) and Kubo (JP '999).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh B. Duong whose telephone number is (571) 272-1836. The examiner can normally be reached on 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith, can be reached on (571) 272-2429. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KBD

Zandra V. Smith
Supervisory Patent Examiner
5/1/2006